

SEQUENCE LISTING

<110> Jenuwein, Thomas  
Laible, Gotz  
O'Carroll, Donal  
Eisenhaber, Frank  
Rea, Stephen

<120> Chromatin-Regulator Genes

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<140> US 09/589,892

<141> 2000-06-09

<150> US 08/945,988

<151> 1997-11-10

<150> PCT/EP96/01818

<151> 1996-05-02

<150> DE 195 16 776.7

<151> 1995-05-10

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<170> PatentIn version 3.2

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gag aag gga cca gtt tgt tgg cgg aag cgt gta aaa tca gag tac atg 161  
Glu Lys Gly Pro Val Cys Trp Arg Lys Arg Val Lys Ser Glu Tyr Met  
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Arg Leu Arg Gln Leu Lys Arg Phe Arg Arg Ala Asp Glu Val Lys Ser  
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Ala	Ser	Val	Pro	Ile	Met	Tyr	Ser	Trp	Ser	Pro	Leu	Gln	Gln	Asn	Phe		
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Asp	Asp	Asp	Asp	Asp	Gly	Asp	Asp	Pro	Glu	Glu	Arg	Glu	Glu	Lys	Gln		
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Lys	Asp	Leu	Glu	Asp	His	Arg	Asp	Asp	Lys	Glu	Ser	Arg	Pro	Pro	Arg		
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Thr Ala Leu Asp Asn Lys Pro Cys Gly Pro Gln Cys Tyr Gln His Leu	
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His Asn Ile Pro Tyr Met Gly Asp Glu Val Leu Asp Gln Asp Gly Thr  
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Arg Glu Cys Gly Phe Ile Asn Asp Glu Ile Phe Val Glu Leu Val Asn  
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Ala Leu Gly Gln Tyr Asn Asp Asp Asp Asp Asp Asp Gly Asp Asp  
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Pro Glu Glu Arg Glu Glu Lys Gln Lys Asp Leu Glu Asp His Arg Asp  
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Val Tyr Asp Lys Tyr Met Cys Ser Phe Leu Phe Asn Leu Asn Asn Asp  
660 665 670

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675 680 685

His Ser Val Asn Pro Asn Cys Tyr Ala Lys Val Met Met Val Asn Gly  
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Asp His Arg Ile Gly Ile Phe Ala Lys Arg Ala Ile Gln Thr Gly Glu  
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Asp Leu Cys Arg Leu Ala Lys Leu Ser Cys Pro Ala Leu Gly Ile Ser  
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Lys Arg Asn Leu Tyr Asp Phe Glu Val Glu Tyr Leu Cys Asp Tyr Lys  
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Ile Leu Lys Gln Phe His Lys Asp Leu Glu Arg Glu Leu Leu Arg Arg  
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cac cac cgg tca aag acc ccc cgg cac ctg gac cca agc ttg gcc aac 392  
His His Arg Ser Lys Thr Pro Arg His Leu Asp Pro Ser Leu Ala Asn  
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Tyr Leu Val Gln Lys Ala Lys Gln Arg Arg Ala Leu Arg Arg Trp Glu  
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Cys Asp Tyr Lys Lys Ile Arg Glu Gln Glu Tyr Tyr Leu Val Lys Trp  
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Arg Gly Tyr Pro Asp Ser Glu Ser Thr Trp Glu Pro Arg Gln Asn Leu  
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Lys Cys Val Arg Ile Leu Lys Gln Phe His Lys Asp Leu Glu Arg Glu  
85 90 95

Leu Leu Arg Arg His His Arg Ser Lys Thr Pro Arg His Leu Asp Pro  
100 105 110

Ser Leu Ala Asn Tyr Leu Val Gln Lys Ala Lys Gln Arg Arg Ala Leu  
115 120 125

Arg Arg Trp Glu Gln Glu Leu Asn Ala Lys Arg Ser His Leu Gly Arg  
130 135 140

Ile Thr Val Glu Asn Glu Val Asp Leu Asp Gly Pro Pro Arg Ala Phe  
145 150 155 160

Val Tyr Ile Asn Glu Tyr Arg Val Gly Glu Gly Ile Thr Leu Asn Gln  
165 170 175

Val Ala Val Gly Cys Glu Cys Gln Asp Cys Leu Trp Ala Pro Thr Gly  
180 185 190

Gly Cys Cys Pro Gly Ala Ser Leu His Lys Phe Ala Tyr Asn Asp Gln  
195 200 205

Gly Gln Val Arg Leu Arg Ala Gly Leu Pro Ile Tyr Glu Cys Asn Ser  
210 215 220

Arg Cys Arg Cys Gly Tyr Asp Cys Pro Asn Arg Val Val Gln Lys Gly  
225 230 235 240

Ile Arg Tyr Asp Leu Cys Ile Phe Arg Thr Asp Asp Gly Arg Gly Trp  
245 250 255

Gly Val Arg Thr Leu Glu Lys Ile Arg Lys Asn Ser Phe Val Met Glu  
260 265 270

Tyr Val Gly Glu Ile Ile Thr Ser Glu Glu Ala Glu Arg Arg Gly Gln  
275 280 285

Ile Tyr Asp Arg Gln Gly Ala Thr Tyr Leu Phe Asp Leu Asp Tyr Val  
290 295 300

Glu Asp Val Tyr Thr Val Asp Ala Ala Tyr Tyr Gly Asn Ile Ser His  
305 310 315 320

Phe Val Asn His Ser Cys Asp Pro Asn Leu Gln Val Tyr Asn Val Phe  
325 330 335

Ile Asp Asn Leu Asp Glu Arg Leu Pro Arg Ile Ala Phe Phe Ala Thr  
340 345 350

Arg Thr Ile Arg Ala Gly Glu Glu Leu Thr Phe Asp Tyr Asn Met Gln  
355 360 365

Val Asp Pro Val Asp Met Glu Ser Thr Arg Met Asp Ser Asn Phe Gly  
370 375 380

Leu Ala Gly Leu Pro Gly Ser Pro Lys Lys Arg Val Arg Ile Glu Cys  
385 390 395 400

Lys Cys Gly Thr Glu Ser Cys Arg Lys Tyr Leu Phe  
405 410

<210> 5

<211> 489

<212> DNA

<213> Homo sapiens

<400> 5

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caccttcata aaggagtctg tgcagaagaa cgaattcatt tctgaatact gtggtgagct 180  
catctctcag gatgaggctg atcgacgcgg aaaggtctat gacaaataca tgtccagctt 240  
cctcttcaac ctcaataatg atttttagt ggatgctact cggaaaggaa acaaaattcg 300  
atttgcaaat cattcagtga atcccaactg ttatgccaaa ggtgagtccc agtaacctgg 360

gaggtgggggt ggggggatgga tgcctcttta ctgtgatttc cattcgttgt tgaacatttt 420  
 ccttagctga gctatctttt gtccaaagat aatcatgatt aatatctggt atcatttttag 480  
 gccctctc 489

<210> 6  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> EcoRI Adaptor oligonucleotide

<400> 6  
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<210> 7  
 <211> 31  
 <212> DNA  
 <213> Drosophila melanogaster

<400> 7  
 actgaattcg gctggggcat ctttcttaag g 31

<210> 8  
 <211> 31  
 <212> DNA  
 <213> Drosophila melanogaster

<400> 8  
 actctagaca atttccattt cacgctctat g 31

<210> 9  
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 <212> DNA  
 <213> Drosophila melanogaster.

<400> 9  
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<210> 10  
 <211> 29  
 <212> DNA  
 <213> Drosophila melanogaster

<400> 10  
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<210> 11  
 <211> 760  
 <212> PRT  
 <213> Drosophila melanogaster

<400> 11

Met Asn Ser Thr Lys Val Pro Pro Glu Trp Lys Arg Arg Val Lys Ser  
1 5 10 15

Glu Tyr Ile Lys Ile Arg Gln Gln Lys Arg Tyr Lys Arg Ala Asp Glu  
20 25 30

Ile Lys Glu Ala Trp Ile Arg Asn Trp Asp Glu His Asn His Asn Val  
35 40 45

Gln Asp Leu Tyr Cys Glu Ser Lys Val Trp Gln Ala Lys Pro Tyr Asp  
50 55 60

Pro Pro His Val Asp Cys Val Lys Arg Ala Glu Val Thr Ser Tyr Asn  
65 70 75 80

Gly Ile Pro Ser Gly Pro Gln Lys Val Pro Ile Cys Asx Ile Asn Ala  
85 90 95

Val Thr Pro Ile Pro Thr Met Tyr Thr Trp Ala Pro Thr Gln Gln Asn  
100 105 110

Phe Met Val Glu Asp Glu Thr Val Leu His Asn Ile Pro Tyr Met Gly  
115 120 125

Asp Glu Val Leu Asp Lys Asp Gly Lys Phe Ile Glu Glu Leu Ile Lys  
130 135 140

Asn Tyr Asp Gly Lys Val His Gly Asp Lys Asp Pro Ser Phe Met Asp  
145 150 155 160

Asp Ala Ile Phe Val Glu Leu Val His Ala Leu Met Arg Ser Tyr Ser  
165 170 175

Lys Glu Leu Glu Glu Ala Ala Pro Ser Thr Ser Thr Ala Ile Lys Thr  
180 185 190

Glu Pro Leu Ala Lys Ser Lys Gln Gly Glu Asp Asp Gly Val Val Asp  
195 200 205

Val Asp Ala Asp Cys Glu Ser Pro Met Lys Leu Glu Lys Thr Glu Ser  
210 215 220

Lys Gly Asp Leu Thr Asp Val Glu Lys Lys Glu Thr Glu Glu Pro Val  
225 230 235 240

Glu Thr Glu Asp Ala Asp Val Lys Pro Ala Val Glu Glu Val Lys Asp  
245 250 255

Lys Leu Pro Phe Pro Ala Pro Ile Ile Phe Gln Ala Ile Ser Ala Asn  
260 265 270

Phe Pro Asp Lys Gly Thr Ala Gln Glu Leu Lys Glu Lys Tyr Ile Glu  
275 280 285

Leu Thr Glu His Gln Asp Pro Glu Arg Pro Gln Glu Cys Thr Pro Asn  
290 295 300

Ile Asp Gly Ile Lys Ala Glu Ser Val Ser Arg Glu Arg Thr Met His  
305 310 315 320

Ser Phe His Thr Leu Pro Cys Arg Arg Cys Phe Lys Tyr Asp Cys Phe  
325 330 335

Leu His Arg Leu Gln Gly His Ala Gly Pro Asn Leu Gln Lys Arg Arg  
340 345 350

Tyr Pro Glu Leu Lys Pro Phe Ala Glu Pro Cys Ser Asn Ser Cys Tyr  
355 360 365

Met Leu Ile Asp Gly Met Lys Glu Lys Leu Ala Ala Asp Ser Lys Thr  
370 375 380

Pro Pro Ile Asp Ser Cys Asn Glu Ala Ser Ser Glu Asp Ser Asn Asp  
385 390 395 400

Ser Asn Ser Gln Phe Ser Asn Lys Asp Phe Asn His Glu Asn Ser Lys  
405 410 415

Asp Asn Gly Leu Thr Val Asn Ser Ala Ala Val Ala Glu Ile Asn Ser  
420 425 430

Ile Met Ala Gly Met Met Asn Ile Thr Ser Thr Gln Cys Val Trp Thr  
435 440 445

Gly Ala Asp Gln Ala Leu Tyr Arg Val Leu His Lys Val Tyr Leu Lys  
450 455 460

Asn Tyr Cys Ala Ile Ala His Asn Met Leu Thr Lys Thr Cys Arg Gln  
465 470 475 480

Val Tyr Glu Phe Ala Gln Lys Glu Asp Ala Glu Ser Phe Ser Glu Asp  
485 490 495

Leu Arg Gln Asp Phe Thr Pro Pro Arg Lys Lys Lys Lys Lys Gln Arg

500							505							510						
Leu	Trp	Ser	Leu	His	Cys	Arg	Lys	Ile	Gln	Leu	Lys	Lys	Asp	Ser	Ser					
		515					520					525								
Ser	Asn	His	Val	Tyr	Asn	Tyr	Thr	Arg	Cys	Asp	His	Pro	Gly	His	Pro					
	530					535					540									
Cys	Asp	Met	Asn	Cys	Ser	Cys	Ile	Gln	Thr	Gln	Asn	Phe	Cys	Glu	Lys					
545					550					555					560					
Phe	Cys	Asn	Cys	Ser	Ser	Asp	Cys	Gln	Asn	Arg	Phe	Pro	Gly	Cys	Arg					
				565					570					575						
Cys	Lys	Ala	Gln	Cys	Asn	Thr	Lys	Gln	Cys	Pro	Cys	Tyr	Leu	Ala	Val					
			580					585					590							
Arg	Glu	Cys	Asp	Pro	Asp	Leu	Cys	Gln	Ala	Cys	Gly	Ala	Asp	Gln	Phe					
		595					600					605								
Lys	Leu	Thr	Lys	Ile	Thr	Cys	Lys	Asn	Val	Cys	Val	Gln	Arg	Gly	Leu					
	610					615					620									
His	Lys	His	Leu	Leu	Met	Ala	Pro	Ser	Asp	Ile	Ala	Gly	Trp	Gly	Ile					
625					630					635					640					
Phe	Leu	Lys	Glu	Gly	Ala	Gln	Lys	Asn	Glu	Phe	Ile	Ser	Glu	Tyr	Cys					
				645					650					655						
Gly	Glu	Ile	Ile	Ser	Gln	Asp	Glu	Ala	Asp	Arg	Arg	Gly	Lys	Val	Tyr					
			660					665					670							
Asp	Lys	Tyr	Met	Cys	Ser	Phe	Leu	Phe	Asn	Leu	Asn	Asn	Asp	Phe	Val					
		675					680					685								
Val	Asp	Ala	Thr	Arg	Lys	Gly	Asn	Lys	Ile	Arg	Phe	Ala	Asn	His	Ser					
						695					700									
Ile	Asn	Pro	Asn	Cys	Tyr	Ala	Lys	Val	Met	Met	Val	Thr	Gly	Asp	His					
705					710					715					720					
Arg	Ile	Gly	Ile	Phe	Ala	Lys	Arg	Ala	Ile	Gln	Pro	Gly	Glu	Glu	Leu					
				725					730					735						
Phe	Phe	Asp	Tyr	Arg	Tyr	Gly	Pro	Thr	Glu	Gln	Leu	Lys	Phe	Val	Gly					
			740					745					750							



Ile Glu Arg Glu Met Glu Ile Val  
755 760

<210> 12  
<211> 134  
<212> PRT  
<213> Homo sapiens

<400> 12

Ser Pro Ile His Gly Arg Gly Leu Phe Cys Lys Arg Asn Ile Asp Ala  
1 5 10 15

Gly Glu Met Val Ile Glu Tyr Ala Gly Asn Val Ile Arg Ser Ile Gln  
20 25 30

Thr Asp Lys Arg Glu Lys Tyr Tyr Asp Ser Lys Gly Ile Gly Cys Tyr  
35 40 45

Met Phe Arg Ile Asp Asp Ser Glu Val Val Asp Ala Thr Met His Gly  
50 55 60

Asn Arg Ala Arg Phe Ile Asn His Ser Cys Glu Pro Asn Cys Tyr Ser  
65 70 75 80

Arg Val Ile Asn Ile Asp Gly Gln Lys His Ile Val Ile Phe Ala Met  
85 90 95

Arg Lys Ile Tyr Arg Gly Glu Glu Leu Thr Tyr Asp Tyr Lys Phe Pro  
100 105 110

Ile Glu Asp Ala Ser Asn Lys Leu Pro Cys Asn Cys Gly Ala Lys Lys  
115 120 125

Cys Arg Lys Phe Leu Asn  
130

<210> 13  
<211> 132  
<212> PRT  
<213> Drosophila melanogaster

<400> 13

Ser His Ile His Gly Arg Gly Leu Tyr Cys Thr Lys Asp Ile Glu Ala  
1 5 10 15

Gly Glu Met Val Ile Glu Tyr Ala Gly Glu Leu Ile Arg Ser Thr Leu  
20 25 30

Thr Asp Lys Arg Glu Arg Tyr Tyr Asp Ser Arg Gly Ile Gly Cys Tyr  
35 40 45

Met Phe Lys Ile Asp Asp Asn Leu Val Val Asp Ala Thr Met Arg Gly  
50 55 60

Asn Ala Ala Arg Phe Ile Asn His Cys Cys Glu Pro Asn Cys Tyr Ser  
65 70 75 80

Lys Val Val Asp Ile Leu Gly His Lys His Ile Ile Ile Phe Ala Val  
85 90 95

Arg Arg Ile Val Gln Gly Glu Glu Leu Thr Tyr Asp Tyr Lys Phe Pro  
100 105 110

Phe Glu Asp Glu Lys Ile Pro Cys Ser Cys Gly Ser Lys Arg Cys Arg  
115 120 125

Lys Tyr Leu Asn  
130

<210> 14  
<211> 133  
<212> PRT  
<213> Caenorhabditis elegans

<400> 14

Ser Arg Ile His Gly Trp Gly Leu Tyr Ala Met Glu Ser Ile Ala Pro  
1 5 10 15

Asp Glu Met Ile Val Glu Tyr Ile Gly Gln Thr Ile Arg Ser Leu Val  
20 25 30

Ala Glu Glu Arg Glu Lys Ala Tyr Glu Arg Arg Gly Ile Gly Ser Ser  
35 40 45

Tyr Leu Phe Arg Ile Asp Leu His His Val Ile Asp Ala Thr Lys Arg  
50 55 60

Gly Asn Phe Ala Arg Phe Ile Asn His Ser Cys Gln Pro Asn Cys Tyr  
65 70 75 80

Ala Lys Val Leu Thr Ile Glu Gly Glu Lys Arg Ile Val Ile Tyr Ser  
85 90 95

Arg Thr Ile Ile Lys Lys Gly Glu Glu Ile Thr Tyr Asp Tyr Lys Phe  
100 105 110

Pro Ile Glu Asp Asp Lys Ile Asp Cys Leu Cys Gly Ala Lys Thr Cys  
115 120 125

Arg Gly Tyr Leu Asn  
130

<210> 15  
<211> 136  
<212> PRT  
<213> *Saccharomyces cerevisiae*  
  
<400> 15

Ser Ala Ile His Asn Trp Gly Leu Tyr Ala Leu Asp Ser Ile Ala Ala  
1 5 10 15

Lys Glu Met Ile Ile Glu Tyr Val Gly Glu Arg Ile Arg Gln Pro Val  
20 25 30

Ala Glu Met Arg Glu Lys Arg Tyr Leu Lys Asn Gly Ile Gly Ser Ser  
35 40 45

Tyr Leu Phe Arg Val Asp Glu Asn Thr Val Ile Asp Ala Thr Lys Lys  
50 55 60

Gly Gly Ile Ala Arg Phe Ile Asn His Cys Cys Asp Pro Asn Cys Thr  
65 70 75 80

Ala Lys Ile Ile Lys Val Gly Gly Arg Arg Arg Ile Val Ile Tyr Ala  
85 90 95

Leu Arg Asp Ile Ala Ala Ser Glu Glu Leu Thr Tyr Asp Tyr Lys Phe  
100 105 110

Glu Arg Glu Lys Asp Asp Glu Glu Arg Leu Pro Cys Leu Cys Gly Ala  
115 120 125

Pro Asn Cys Lys Gly Phe Leu Asn  
130 135

<210> 16  
<211> 429  
<212> PRT  
<213> *Drosophila melanogaster*  
  
<400> 16

Met Gly Val Ile Ala Lys Arg Pro Pro Lys Gly Glu Tyr Val Val Glu  
1 5 10 15

Arg Ile Glu Cys Val Glu Asn Asp Gln Tyr Gln Pro Val Phe Phe Val  
20 25 30

Lys Trp Leu Gly Tyr His Asp Ser Glu Asn Thr Trp Glu Ser Leu Ala  
35 40 45

Asn Val Ala Asp Cys Ala Glu Met Glu Lys Phe Val Glu Arg His Gln  
50 55 60

Gln Leu Tyr Glu Thr Tyr Ile Ala Lys Ile Thr Thr Glu Leu Glu Lys  
65 70 75 80

Gln Leu Glu Ala Leu Pro Leu Met Glu Asn Ile Thr Val Ala Glu Val  
85 90 95

Asp Ala Tyr Glu Pro Leu Asn Leu Gln Ile Asp Leu Ile Leu Leu Ala  
100 105 110

Gln Tyr Arg Ala Ala Gly Ser Arg Ser Gln Arg Glu Pro Gln Lys Ile  
115 120 125

Gly Glu Arg Ala Leu Lys Ser Met Gln Ile Lys Arg Ala Gln Phe Val  
130 135 140

Arg Arg Lys Gln Leu Ala Asp Leu Ala Leu Phe Glu Lys Arg Met Asn  
145 150 155 160

His Val Glu Lys Pro Ser Pro Pro Ile Arg Val Glu Asn Asn Ile Asp  
165 170 175

Leu Asp Thr Ile Asp Ser Asn Phe Met Tyr Ile His Asp Asn Ile Ile  
180 185 190

Gly Lys Asp Val Pro Lys Pro Glu Ala Gly Ile Val Gly Cys Lys Cys  
195 200 205

Thr Glu Asp Thr Glu Glu Cys Thr Ala Ser Thr Lys Cys Cys Ala Arg  
210 215 220

Phe Ala Gly Glu Leu Phe Ala Tyr Glu Arg Ser Thr Arg Arg Leu Arg  
225 230 235 240

Leu Arg Pro Gly Ser Ala Ile Tyr Glu Cys Asn Ser Arg Cys Ser Cys  
245 250 255

Asp Ser Ser Cys Ser Asn Arg Leu Val Gln His Gly Arg Gln Val Pro  
260 265 270

Leu Val Leu Phe Lys Thr Ala Asn Gly Ser Gly Trp Gly Val Arg Ala  
275 280 285

Ala Thr Ala Leu Arg Lys Gly Glu Phe Val Cys Glu Tyr Ile Glu Glu  
290 295 300

Ile Ile Thr Ser Asp Glu Ala Asn Glu Arg Gly Lys Ala Tyr Asp Asp  
305 310 315 320

Asn Gly Arg Thr Tyr Leu Phe Asp Leu Asp Tyr Asn Thr Ala Gln Asp  
325 330 335

Ser Glu Tyr Thr Ile Asp Ala Ala Asn Tyr Gly Asn Ile Ser His Phe  
340 345 350

Ile Asn His Ser Cys Asp Pro Asn Leu Ala Val Phe Pro Cys Trp Ile  
355 360 365

Glu His Leu Asn Val Ala Leu Pro His Leu Val Phe Phe Thr Leu Arg  
370 375 380

Pro Ile Lys Ala Gly Glu Glu Leu Ser Phe Asp Tyr Ile Arg Ala Asp  
385 390 395 400

Asn Glu Asp Val Pro Tyr Glu Asn Leu Ser Thr Ala Val Arg Val Glu  
405 410 415

Cys Arg Cys Gly Arg Asp Asn Cys Arg Lys Val Leu Phe  
420 425

<210> 17  
<211> 166  
<212> PRT  
<213> Homo sapiens

<400> 17

Thr Ala Lys Met Gly Trp Gly Val Arg Ala Leu Gln Thr Ile Pro Gln  
1 5 10 15

Gly Thr Phe Ile Cys Glu Tyr Val Gly Glu Leu Ile Ser Asp Ala Glu  
20 25 30

Ala Asp Val Arg Glu Asp Asp Ser Tyr Leu Phe Asp Leu Asp Asn Lys  
35 40 45

Asp Gly Glu Val Tyr Cys Ile Asp Ala Arg Tyr Tyr Gly Asn Ile Ser  
50 55 60

Arg Phe Ile Asn His Leu Cys Asp Pro Asn Ile Ile Pro Val Arg Val  
65 70 75 80

Phe Met Leu His Gln Asp Leu Arg Phe Pro Arg Ile Ala Phe Phe Ser  
85 90 95

Ser Arg Asp Ile Arg Thr Gly Glu Glu Leu Gly Phe Asp Tyr Gly Asp  
100 105 110

Arg Phe Trp Asp Ile Lys Ser Lys Tyr Phe Thr Cys Gln Cys Gly Ser  
115 120 125

Glu Lys Cys Lys His Ser Ala Glu Ala Ile Ala Leu Glu Gln Ser Arg  
130 135 140

Leu Ala Arg Leu Asp Pro His Pro Glu Leu Leu Pro Glu Leu Gly Ser  
145 150 155 160

Leu Pro Pro Val Asn Thr  
165

<210> 18  
<211> 139  
<212> PRT  
<213> Homo sapiens

<400> 18

Thr Gln Asn Lys Gly Trp Gly Ile Arg Cys Leu Asp Asp Ile Ala Lys  
1 5 10 15

Gly Ser Phe Val Cys Ile Tyr Ala Gly Lys Ile Leu Thr Asp Asp Phe  
20 25 30

Ala Asp Lys Glu Gly Leu Glu Met Gly Asp Glu Tyr Phe Ala Asn Leu  
35 40 45

Asp His Ile Glu Ser Val Glu Tyr Ile Ile Asp Ala Lys Leu Glu Gly  
50 55 60

Asn Leu Gly Arg Tyr Leu Asn His Ser Cys Ser Pro Asn Leu Phe Val  
65 70 75 80

Gln Asn Val Phe Val Asp Thr His Asp Leu Arg Phe Pro Trp Val Ala  
85 90 95

Phe Phe Ala Ser Lys Arg Ile Arg Ala Gly Thr Glu Leu Thr Trp Asp  
100 105 110

Tyr Asn Tyr Glu Val Gly Ser Val Glu Gly Lys Glu Leu Leu Cys Cys  
115 120 125

Cys Gly Ala Ile Glu Cys Arg Gly Arg Leu Leu  
130 135

<210> 19  
<211> 20  
<212> PRT  
<213> Homo sapiens

<400> 19

Ala Arg Thr Lys Gln Thr Ala Arg Lys Ser Thr Gly Gly Lys Ala Pro  
1 5 10 15

Arg Lys Gln Leu  
20

<210> 20  
<211> 20  
<212> PRT  
<213> Homo sapiens

<400> 20

Met Gly Pro Arg Arg Arg Ser Arg Lys Pro Glu Ala Pro Arg Arg Arg  
1 5 10 15

Ser Pro Ser Pro  
20

<210> 21  
<211> 20  
<212> PRT  
<213> Rattus sp.

<400> 21

Met Ser Ser Arg Gly Gly Lys Lys Lys Ser Thr Lys Thr Ser Arg Ser  
1 5 10 15

Ala Lys Ala Gly  
20